Arizona Educational Technology Plan
Adding the Sixth "C"
to the Economic Picture[1]

2002 - 2007

June 24, 2002
(Amended December 2004 to comply with Federal Review and approved by the Arizona Board of Education on 1/24/05)

Arizona Department of Education
Tom Horne, Superintendent of Public Instruction
Janet Napolitano, Governor

***Copper, Cattle, Cotton, Citrus, Climate**
and now CHILDREN

[1] The plan itself is modeled on the SouthEast Initiatives Regional Technology in Education Consortium (SEIR*TEC), Feb 2002 Logic Map for planning and the document strives to parallel that design.

Executive Summary

To implement the most reasonable plan when there has been a dramatic downturn in the economy is difficult. However that is when it is critical to plan carefully in attempting to implement technology. Arizona is a state that is currently funding education at a national low, is producing students testing at the lowest levels, and is demonstrating a poor record of retention in schools at all levels. However, this is certainly NOT an indication of the heart and will of the citizens. Citizen action has passed into law a number of funding directives and Accountability Measures designed to support public education. The State of Arizona, along with the educational community is committed to achieving national standards of excellence by creating standards, benchmarks, and support systems at the state level to insure that our students succeed. Improving academic achievement for all students is paramount for the state. Policies and mandates are in place to serve as the foundation for success of this plan. The Academic Standards in Arizona, supported by the Student Accountability measures are rigorous and yet attainable.

To this end, this Technology Plan blends many separate "grass roots" efforts to provide a level of excellence to our youth. Over the last 20 years or more educators, parents, business and industry leaders and the legislature, working sometimes alone and sometimes in concert, have tried to develop a cohesive plan of action related to education and technology. As these efforts were reviewed, it became immediately evident that all were targeting the same goals, the same populations and often used the same timeline and methods. Therefore, a coordinated effort was needed.[2]. The ultimate goal of this plan, therefore, is to develop a comprehensive technology strategy that, like the goals of the federal government, will make sure that **No Child Is Left Behind.**[3]

The goals of the plan are:

Goal 1: Improve student academic achievement through the use of technology in elementary and secondary schools **with a target of fully integrating technology into the academic curriculum by December 2006**.

Goal 2: Ensure that quality teachers, staff and administrators are involved in Arizona educational institutions and that they are proficient in the use and integration of technology through Professional Development**.**

Goal 3: Ensure that all K-12 educational institutions have the capacity, infrastructure, staffing, and equipment to meet academic and business needs for effective and efficient operations.

Goal 4: Ensure that all K-12 institutions will be positively involved in collaborations and partnerships which are supportive of technology use and integration

Goal 5: Ensure that all K-12 resources are available for all students (regardless of race, ethnicity, income, geographical location, or disability) to become technologically literate by the end of eighth grade and achieve their academic potential.

[2] A complete list of Plan Design participants is found in Appendix A

[3] Bold text references federal guidelines.

Goal 6: Develop a continuous process of evaluation and accountability for the use of Educational Technology as a teaching/learning tool, measurement and analysis tool for student achievement and fiscal management tool.

Goal 7: Develop a schema of current and future funding requirements to support the Arizona State Technology Plan.

These seven specific goals address not only the needs of Arizona as they have been identified by the planning groups and legislature, but also those brought by the citizens of the state through propositions. The premise behind every goal is that they are “continually moving targets” and that, unlike some subjects, technology does not remain static. Nor, can a technology plan be “done” except for a brief moment in time. Funding will always be a problem with a plan that is constantly evolving and a variety of funding sources will, over time, need to be identified and utilized to bring the plan to fruition.

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Vision

The vision of the Arizona Department of Education's Technology Plan is to provide a technology-enhanced environment that enables and supports life-long learning for every student and adult involved in the education process. It envisions an ongoing educational process that utilizes technology-enhanced, standards-based instruction as an integral part of the learning environment and school management.

Mission

The mission of the Arizona Department of Education's Technology Plan is to provide the leadership, funding, qualified professionals, decision-making and management tools, research, effective policies, and infrastructure to ensure and support this environment. The Arizona Department of Education will provide an environment that supports improved student achievement that is equitable for all students where students, parents, community, and staff have the information and support to be accountable for student learning. Students within this environment will demonstrate the leadership, teamwork, problem solving, time management, self-management, analytical thinking and basic communication skills to be literate, globally competitive, adult citizens.

Connections

The United States Department of Education has adopted a Strategic Plan for 2002-2007. Statements from that document **"The ultimate objective of any educational enterprise is to improve student achievement so that individuals may contribute to our democracy, economy, and communities and live their own American dreams. Improving student achievement is hard. It requires meaningful change in the way educators do their work. It requires new structures, new tools and new knowledge. But more than anything, to boost student achievement, to leave no child behind, we must change the culture of the education system."** Further, this Arizona Technology Plan supports Secretary Paige's Priorities, specifically:

Long-term Research Study (What are the effective conditions for technology to improve student achievement and instruction?),
eLearning (What policies, laws, and regulations must be changed to accommodate virtual high schools, cyber charter schools, and online learning opportunities?),
On-line assessment and data driven decision-making

To support Secretary Paige's priorities, the state of Arizona proposes to create (through SAIS) a "longitudinal student data that would enable Arizona's educators, policymakers, and researchers to do the following:

- Follow students from high school through college (K-20)
- Identify the relationship between early achievement levels and later student success
- Analyze the effects of specific state policies
- Control for student mobility in reporting school test scores
- Improve the accuracy of socioeconomic data for high schools
- Create fair comparisons of middle and high schools
- Improve the investigation of promising practices

An **information factory**, supported by a **data warehouse** would provide the longitudinal information needed for improving education in Arizona." (Information Factory for Education: Proof of Concept, January 2004)

Elements of the Plan

A. Plan History and Design

By the end of the 20th Century, Arizona stakeholders had determined that technology should play a vital role in the education of our children. Unfortunately not all children had equal opportunities or access to technology. To remedy these inequities, representatives from a group of schools filed suit for equal funding and support in all Arizona Schools. The consortium of schools won their suit and the Arizona School Facilities Board was implemented to address the inequities in funding. The Board was charged with bringing all schools to a uniform set of physical standards of facilities and equipment. The State Legislature appropriated funding and the School Facilities Board has been working to address inequities across the state. To address inequities in access to technology, the Board has authorized the purchase of thousands of computer systems across the state. To insure the proper use of this equipment, the Board is working with Arizona School Services through Educational Technology (ASSET) to create professional development opportunities for Arizona's educators.

During 2001-2002, a group of business and industry leaders in the state funded a project to develop a framework for technology integration in Arizona K-12 and establish a "roadmap" for consistency and coherence in implementation. Coordinated by the Center for Research on Education in Science, Mathematics, Engineering and Technology (CRESMET), this consortium of educators and business leaders has developed a framework for technology development and integration. This framework includes recommendations for responsibility – resources that have made tentative commitment to support the framework– to complete the design.

In another initiative, the Arizona Technology in Education Alliance (AzTEA), a statewide professional group, revisited the Technology Standards component of the Educational Academic Standards for Arizona. Working under the direction of AzTEA members, a large group of constituents from around the state revised the standards to align them with a set of nationally accepted standards developed by the International Society for Technology in Education. The revised standards brought together and solidified a number of efforts and provided a starting point for the Technology Plan. It is the goal of the Department of Education to routinely review the technology standards, along with this Technology plan, to ensure that both are continuously adapting to the ever changing technology landscape.

The following principles guided the development of this plan.

The state of Arizona must assist every student in crossing the digital divide by ensuring that he/she is technologically literate by the time they complete the eighth grade Technology is no longer the path to future success for Arizona children—it is the path to current success. If used appropriately, research shows that technology enriches the learning environment leading to better student performance (Achieving Academic Excellence). Therefore, educational technology can:

- allow learning to occur in ways not possible otherwise;
- be a means for improving learning in all subjects;
- expand students' creative abilities;
- promote students' taking responsibility for their own learning;

- positively impact at-risk student populations;
- promote students' interaction with a larger community (e.g., discussions directly with experts, with other students working on the same or similar projects, etc.), and
- give students experience with modern workplace tools.

In short, technology, when implemented appropriately, has great potential to give Arizona students an enhanced learning environment. As an additional benefit, Arizona children will be exposed to and utilize technology that will better prepare them to enter today's society and economy as active participants.

Currently, many Arizona educators are using available educational technology at their school sites and/or districts as a tool to create learning environments for children that guide them into the 21st century. These technology rich environments are a result of a variety of opportunities available to teachers, including individual exploration, professional development, mentoring and coaching, college/university coursework, and other personal growth opportunities. In addition, some teachers have been supported with additional hardware, software, training, and professional development in the area of educational technology by becoming a part of larger private industry, federal, district and state funded programs. Examples of these include the Intel Teach to the Future, AzCOTT Regent's grants and more. Equally apparent are also the educators who have access to classroom technology ONLY through the Student's FIRST project (now 4 years old) that specified a Student-Computer ratio of 8:1. This program did not have a renewal provision and now the technology is dated by business/industry standards and the entire project did not address adult access.

Teachers who have embraced the integration of educational technology find that, as additional hardware, software, and peripherals become part of their classroom environment, a profound change of pedagogy is possible and, indeed, necessary. Therefore, one purpose of this state educational technology plan is to provide teachers with the resources and the environment that will allow them to change their pedagogy and their classroom management techniques. For example, as the current paradigm changes, teacher-centered classrooms are less prevalent, being replaced by more student-centered environments where students are actively engaged in the learning process and are given choices to personalize their learning. The teacher's role becomes one of emphasizing facilitation and guidance. As facilitator in the classroom environment, a teacher helps empower students to reach their full potential using a variety of tools, strategies, and learning modalities.

In a student-centered classroom, students have opportunities and choices regarding their learning styles and preferred method of interaction. You might see a teacher instructing a small group of students on how to collect, analyze, and interpret data through the use of a spreadsheet and then electronically graph the results. Another group might be utilizing search strategies to gather information on the Internet, communicating with e-pals (electronic pen pals) in Australia or experts at NASA. Individual students might be using various peripherals and incorporating them into multimedia projects. A pair of students interested in a unique way to capture information for a report might be creating video using digital editing tools. In another area of the room, an individual who wished to work alone might be talking to an expert online about photosynthesis or collecting real data through the use of online resources.

In all of these technology rich situations, teachers have redefined students' roles as learners by developing a shared vision where students can make meaningful connections across disciplines, express themselves creatively, think critically, and be empowered to realize their full potential. These teachers have also created a new model of their own role in a student's education. A teacher's role is no longer one of the sole sources of factual information. Instead, teachers have become facilitators of the learning process sharing their passion for their subject and wisdom of the discipline rather than being mere purveyors of facts and figures.

However, education that integrates technology into the curriculum, even if it results in improved student achievement, is meaningless if all of Arizona's students do not have access to that technology. The significant enhancement to teaching and learning afforded by resources available on the Internet is lost if schools do not have the infrastructure necessary to deliver broadband voice, video, text and graphic data to adequate multimedia computers available in all classrooms. Insufficient numbers of computers distributed in classrooms, even given adequate Internet connectivity and computing power is as educationally irresponsible in the 21st Century as classrooms with insufficient numbers of textbooks were in the 20th Century.

The national Strategic Plan states in unambiguous language the measurable goals and objectives the Department intends to achieve. It creates the base of an accountability system for this agency, as it works to imbue accountability throughout the nation's education system. Thus, achievement of both professional development and student achievement goals relies upon the creation of a networking infrastructure, provision of adequate numbers of powerful computers in every classroom, and sufficient accountability. This is even more crucial in the remote areas of Arizona where community resources are insufficient to provide students the opportunities that more affluent students in the more dense population centers may enjoy in their homes.

Finally, to blindly continue practices without evidence of progress, growth and improvement is neither wise nor appropriate. Accountability in ensuring use of Best Practices, in determining and supporting progress in student achievement and reporting to the citizens related to the effective and efficient use of resources becomes critical. The state will continue to establish policies, processes and procedures that ensure districts account for all resources in a systematic and efficient manner. Student progress will be tracked, analyzed, and reported to promote student achievement. LEAs will be supported in implementing SAIS compliant information systems.

B. Needs Assessment

The needs assessment done for the CREMET Framework Issue 4, Capacity, Infrastructure Staffing and Equipment, was collected in 2000-2001. It utilized the initial School Facility Board data and self-reporting from districts (not including charter schools). It also was based on the annual ADE Technology Survey. Currently, the ADE technology survey collects basic inventory counts on a voluntary basis with no consequences and no incentives to comply. The data collected cannot be consistently aggregated or disaggregated for planning purpose.

Goal 3, of this plan, is to "ensure that all K-12 educational institutions have the capacity, infrastructure, staffing, and equipment to meet academic and business needs for effective and efficient operations." Specially, Objective 3.4 references the need to continually refine data collection systems. This need to have accurate data for planning and decision making requires continual review of both the questions to be asked and the data collection methods.

C. Key Issues

Relationship of the Arizona Technology Plan with Superintendent Horne's State Initiatives and Goals of the Arizona Department of Education

Superintendent of Public Education Tom Horne outlined an accountability program that is the framework for all education in Arizona K-12 schools. Called "Leading Education through the Accountability and Notification System", or Arizona LEARNS, this framework relies on central accountability ensuring that all students have the skills and knowledge to succeed. The key components of Arizona LEARNS include:

- Ensuring that all students are being taught Arizona's Academic Standards through Curriculum and Instructional affidavits required of schools **(Achieving Academic Excellence by aligning advanced technology with challenging State Standards).**
- Providing fair and accurate measurement of school performance, permitting educators, the State Board of Education and the Department of Education to take action on behalf of students **(Effective and through measurement of achievement and progress year to year).**
- Underscoring the need to focus on school improvement with Department of Education support for teachers, governing board members, administers and parents. **(Innovative delivery strategies and strategies for parental involvement)**
- Implementing clear rewards and sanctions for schools that do not take action on behalf of their students.

The LEARNS initiatives are summarized as: K-3 Reading, School Accountability and Student Assessment. All three are heavily linked or even dependent on a consistent and reliable system of technology connecting the state "seamlessly" with knowledgeable users.

The Student Accountability Information System (SAIS) has achieved its first goal of gathering student-level enrollment/membership and demographics data for fiscal accountability. SAIS will

now be expanded, initially by adding both student special needs and student-level achievement results. These additions will yield specific information not previously available, and begin the creation of longitudinal student records, the basis for following students over time by matching student records over multiple years.

Longitudinal student data will enable Arizona's educators, policymakers, and researchers to: follow students from high school to college; correlate early achievement levels with later student success; analyze the long-term impact of early-childhood, bilingual, and dropout prevention programs; control for student mobility in reporting school test scores; improve the accuracy of socioeconomic data for high schools; create fair comparisons of middle and high schools; and improve the investigation of promising practices.

Information will be organized into specialized Data Marts, and an online analysis tool will enable users to explore and analyze data for reporting and decision support. Once special needs and achievement data have been added to SAIS, the next step will be the addition of longitudinal Teacher information (certification, preparation, experience), followed by Class information (instructional materials, curricula, courses and sections). The ultimate result is the creation of an agency information factory, which will enable correlation of all education data over time.

Relationship of the Arizona Technology Plan with Arizona's Students FIRST (School Facilities Board project)

Arizona's state funded Students FIRST program has, since 1999, made groundbreaking strides in improving access to adequate computing. Initially, Students FIRST provided 36,000 multimedia Internet ready computers to ensure an 8:1 student-computer ratio in every one of Arizona's 228 public school districts. Many computers are already in place, which connect to a local area network (LAN) within a LEA. Therefore, the second phase of the statewide educational technology initiative was to connect every district to ADE's Network. The intention is to have every school in every district connected via a wide area network (WAN) with a district aggregation point that is then connected to the Internet with a broadband connection that allows transmission and reception of voice, video, text and graphic data.

Cox Business services, in cooperation with the School Facilities Board created "The Education Desktop" using an application service provider (ASP) model available to every public school at no charge through June 2005. The ASP delivers and manages over 250 educational titles, (i.e., content, courseware, reference materials), and communications software titles from a central location to over 900,000 users statewide via the Internet. By, January 2004, the ASP hosts school and teacher websites and provides e-mail services for staff and students. Because these resources are available over the Internet, access to students, staff, parents, and teachers can be from school or home. Students are able to access their own work and the software from the ASP which the school district is using from any place they have access to the Internet. The advantage of this in a highly mobile society is obvious.

As cutting edge as these Students FIRST[4] achievements are, they are the beginning, not the end, of meeting a continuing challenge. Given the constant flux and lightening speed with which

[4] Student's FIRST (Fair and Immediate Resources for Students Today) is limited to supporting only non-charter public schools. The standards created are voluntary for charter, private and parochial schools.

technology information systems are changing, this State Plan, covering all aspects of educational technology including provisions for assessment, is necessary. In fact, **No Child Left Behind** makes reference to students who complete grade eight (8) need to be "technologically literate." A committee of ADE and WestEd representatives is investigating options to measure technology literacy. The national priorities include increasing access to technology for all students and teachers. This cannot be done without the technology itself in place in sufficient quantity, quality and support (maintenance, personnel and infrastructure) to make it happen.

Relation of the Arizona Technology Plan to Arizona State Technology Standards

In 2000 the Arizona State Board of Education adopted a revised set of technology standards for grades K-12. The Revision Committee analyzed current research on technology skills important to business and industry as well as national standards and preexisting state standards. With the goal of creating standards that "help students live, learn and work successfully and responsibly in an increasingly complex, technology-driven society," the Revision Committee designed a set of educational technology standards for Arizona. Aligned closely with the standards created by the International Society of Technology in Education (ISTE), the Arizona standards encompass a deep understanding of learning potential. The standards define technology as the application of tools to solve problems that extend human potential for the benefit of society. The standards are as follows:

Standard 1: Fundamental Operations and Concepts

Students understand the operations and functions of technology systems and are proficient in the use of technology.

Standard 2: Social, Ethical and Human Issues

Students understand the social, ethical and human issues related to using technology in their daily lives and demonstrate responsible use of technology systems, information and software.

Standard 3: Technology Productivity Tools

Students use technology tools to enhance learning, to increase productivity and creativity and to construct technology-enhanced models, prepare publications and produce other creative works.

Standard 4: Technology Communications Tools

Building on productivity tools, students will collaborate, publish, and interact with peers, experts and other audiences using telecommunications and media.

Standard 5: Technology Research Tools

Students utilize technology-based research tools to locate and collect information pertinent to the task, as well as evaluate and analyze information from a variety of sources.

Standard 6: Technology as a Tool for Problem Solving and Decision-Making

Students use technology to make and support decisions in the process of solving real world problems.

All of the Technology Standards are cross-referenced to the other Arizona Academic Standards to support the concept of integration and relevance.

Relationship of the Arizona Technology Plan with Effective Schools Research Findings

The current research emphasizes the power for change in the practice of focusing instruction on Academic Standards and aligning curriculum both horizontally and vertically with a site and district. The reality is that doing this "by hand" is not only frustrating to the user but also makes the essential collegial sharing almost impossible. Heidi Hayes Jacobs and Robert Marzano, among others, have presented research that is conclusive about the need to align and focus instruction. Alignment and focus depend on the use of the tools of technology to make this possible within the time frame of the educational environment. Until educational personnel have access, incentive and support to make this transition, students will not see the results.

In addition, the MILE Guide for 21st Century Skills (a Tucson-based public-private organization comprised of business, industry and education partners) provides Milestones for teaching and learning based on learning skills that are perceived to be academic requirements embedded in the traditional Academic Standards as prescribed by the state. These are: Information and Communication Skills, Thinking and Problem Solving Skills and the Interpersonal and Self-directional skills of Collaboration, Self-direction, Accountability and adaptability and Social Responsibility. Technology should support all learning skills, as many of the multiple intelligences and the research into what is effective teaching and learning as possible, not be an isolated phenomena in the field.

Relationship of the Arizona Technology Plan with LEA Technology Plans

The Arizona Technology Plan is formulated to directly relate to the goals and objectives of **No Child Left Behind** federal requirement. All local educational agencies' (LEA) Technology Plans will be gauged against a rubric that mirrors the State and National Plans. Prior to accepting applications for technology funding from either state or national sources, an LEA plan will be reviewed against this rubric and must meet standards to be accepted for consideration.

Relationship of the Arizona Technology Plan to the No Child Left Behind

Every effort has been made to not only comply with the directives of No Child Left Behind, but to build in redundancy to ensure that the plan is implemented. Specific correlations between the Arizona Technology Plan and federal requirements are in table form in the Appendix.

C. Goals and Objectives of the Arizona Educational Technology Plan

Arizona is challenged by the goal of ubiquitous educational technology infusion in the K-12 system as well as an effective and efficient investment of public and private funds and resources. Of course, the ultimate goal of any K-12 educational technology plan is to provide the resources and processes necessary for enabling students to meet the education standards. Thus, students making reasonable progress in meeting these standards will become the measure of accountability. *Ultimately we must use advanced technology to improve student academic achievement, aligned with challenging State standards. To this end, we encourage the establishment or expansion of initiatives (including those involving public-private partnerships) that are designed to increase access to technology, particularly in schools served by "high-need local educational agencies." Further, to assist…in the acquisition, development, interconnection, implementation, improvement, and maintenance of an effective educational technology infrastructure in a manner that expands access of technology to students and teachers.* [5]

The program toward universal access and use of technology brings with it a new set of challenges. As Students FIRST and the ASP deployment is completed and implementation takes effect, the impact on the resources will explode. While the bandwidth today is exciting and the access is comfortable, this will not remain the case. This plan encourages a review of the Internet service provider (ISP) systems used by LEAs in the state to improve service. Currently many LEAs are using the Universities as their ISP providers, but the connections they provide may not be suitable for voice, video text and graphics (unless upgraded). Arizona is fortunate in having a full "set" of ambitious and challenging Academic Standards for Student Achievement[6] along with a criterion referenced assessment instrument (AIMS) aligned to the Language Arts and Math standards. Thus, the ultimate accountability is that students make reasonable progress in meeting these standards. The Arizona Stakeholders who worked on this plan emphasized that there are three specific areas that must be directly addressed:

- **Maintain currency of the Plan** *to support a comprehensive system that effectively uses technology in elementary and secondary schools to improve student academic achievement. This also parallels the purpose of supporting the development and use of electronic networks and other innovative methods, such as distance learning, to provide specialized or rigorous courses or curricula to students who would not otherwise have access to such information, particularly to those in geographically isolated regions.*
- **Monitor progress in implementation** *to support a rigorous evaluation of programs funded under the Ed Tech Act, particularly regarding the impact of these programs on student academic achievement and ensure that the results are widely accessible through electronic means. Additionally to support initiatives that enable school personnel and administrators to integrate technology effectively into curriculum and instruction that are aligned with State standards, through such means as high-quality professional development programs.*

[5] A parallel is drawn between the Arizona goals and the stated purposes of the national Ed Tech program. National purposes are in italics.
[6] http://www.ade.state.az.us/state_tests_acad_stds.asp

- **Monitor student progress in educational technology use** *to support local efforts to use technology to promote parent and family involvement in education and to enhance communication among students, parents and school personnel and to enhance ongoing professional development for teachers, principals, and administrators by providing constant access to training and updated research in teaching and learning through electronic means.*

Using the resources and information listed previously, specifically the work of CRESMET's Framework to Promote State-wide Technology Integration in K-12 Education, focus groups consisting of K-12 administrators, teachers, parents, industry stakeholders and university faculty determined twelve key issues that should be included in a comprehensive state framework. Review of other state educational technology plans and interviews with state technology directors helped determine the corresponding benchmarks of these components. From these twelve key issues, we have distilled the following seven key goals for the State of Arizona.

Goal 1: Improve student academic achievement through the use of technology in elementary and secondary schools **with a target of fully integrating technology into the academic curriculum by December 2006**.

Goal 2: Ensure that quality teachers, staff and administrators are involved in Arizona educational institutions and that they are proficient in the use and integration of technology through professional development activities**.**

Goal 3: Ensure that all K-12 educational institutions have the capacity, infrastructure, staffing, and equipment to meet academic and business needs for effective and efficient operations.

Goal 4: Ensure that all K-12 institutions will be positively involved in collaborations and partnerships that are supportive of technology use and integration.

Goal 5: Ensure that all K-12 resources are available for all students, regardless of race, ethnicity, income, geographical location, or disability, to become technologically literate by the end of eighth grade and achieve their academic potential.

Goal 6: Develop a continuous process of evaluation and accountability for the use of Educational Technology as a teaching/learning tool, as measurement and analysis tool for student achievement and as a fiscal management tool.

Goal 7: Develop a schema of current and future funding requirements to support this Arizona State Technology Plan.

D. Arizona's Technology Environment

Planning into Practice: Resources for Planning, Implementing, and Integrating Instructional Technology [7] identifies specific actions and strategies needed to develop a technology plan that will be successful. Among these are:

- **Provide high quality professional development for teachers and administrators.** Th**r**ough a variety of structures, the Department of Education has provided statewide support to both public and charter schools on technical issues through the Regional Training Centers (RTC). While these efforts were initially supportive of the Student Accountability Information System (SAIS), it became evident that they also filled a need for support in other technical areas. In the first eight months since the inception of TeacherLine (ASSET provided and funded through School Facilities Board), over 2,500 teachers had taken advantage of 700 fifteen-hour professional development modules. In other venues across Arizona, teachers have taken advantage of grants funded at the University of Arizona with Tucson Unified School District (COPI) and at Arizona State University-West with a consortium of districts. There are also two TICG, Technology Innovation Challenge Grants, Project Venture and Global Connections. For administrative support the Arizona K-12 Center has a Gates Foundation grant for Leadership Academies (LIT). These grants incorporate the best of research related to teaching/learning and technology.

  The technology dollars provided by Enhancing Education Through Technology, Title IID, mandates that 25% of the funds be used for high quality professional development for all teachers and administrators. However, with 42,000 teachers (public and charter) and 3,000 administrators much still remains to be done. The Arizona Department of Education also sponsors the Professional Development Leadership Academy (PDLA) looking at whole school environment and all instructional strategies and best practices for increasing academic achievement. WEST Ed provides a source of modeling, consultation and evaluation to schools.

  For the 2004-2005 school year, the Arizona Department of Education and AzTEA have partnered to provide three regional technology training conferences. The conference theme is "Mapping the Big Picture" with Technology. This partnership exemplifies high quality, sustained, embedded professional development.

- **Install, maintain, and upgrade technology infrastructure (access).** While the impetus may have come from a grass roots lawsuit, the end result of the "Students FIRST" project (School Facilities Board) has been an equalization of all schools with a standard of infrastructure, hardware, and now software. The state has the majority of all public school facilities approaching physical standards of health and safety as well as standards that support academic improvement. The School Facilities Board has funded the installation of 34,000 multimedia, Internet capable, computers in public schools at a ratio of 8:1 and has a 100 megabyte connection to the desktop capable of

[7] **Planning into Practice: Resources for Planning, Implementing, and Integrating Instructional Technology**; SouthEast Initiatives Regional Technology in Education Consortium. http://www.seirtec.org/P2P.html

being upgraded to 1 gigabyte over time. However, the SFB faces multiple funding issues, which often challenge the efforts to support and maintain structurally sound learning environments for Arizona Schools.

Additionally, federal dollars, through the Technology Literacy Challenge Fund, ensured basic connectivity for all public and charter schools in the state. This allowed reporting from district to state and streamlined services from state to district. Further, the emphasis on accountability from the state has resulted in all schools having a "report card" on line for the public's review. One of the benchmarks for this effort was to ensure interoperability of systems within the LEA and between LEAs and the state. The intent of the standards and policies are to be able to maintain continuity of service rather than a continual cycle of obsolescence.

- **Provide technical support to teachers and administrators.**
  Though a variety of structures, the Department of Education has provided statewide support to both public and charter schools on technical issues through the Regional Training Centers (RTC). While these initially were supportive of the Student Accountability Information System (SAIS), they quickly filled a need for support in other technical areas. Many LEAs used grant, state and district funds to develop support systems for personnel in the form of hotlines and help desk systems. The School Facilities Board through the ASP (Arizona Service Providers) project provides an email account and digital locker for every teacher and student in state - public and charter - with 10 megabyte per user storage (capable of a 12 year portfolio per student).

  Align curriculum, assessment and technology use.
  Arizona was among the first state to develop rigorous Academic Standards. Among those were standards for technology. While the Educational Technology standards are not scheduled for direct competency testing, the 2000 revision cross-referenced each competency and most performance objectives to the other Academic Standards. The state utilizes a mastery system of assessment that uses the Stanford 9 for language and math at grades 3, 5, 8 and 11 and will, following revisions, re-institute the state's assessment (AIMS) instrument that will also provide benchmarks for progress. With the proposed implementation of the "combined" SAT9 and AIMS and the projected use of technology to administer and score results, the need for technology standards and infrastructures becomes more critical. The creation of a data warehouse will bring together existing disparate data systems and consolidate operational data and historic data for consumer use. The ability to include assessments of technology literacy for students and adults as well as indications of technology integration disaggregated down to the individual stored in such a warehouse would greatly enhance the state's ability to comply with federal expectations.

- **Identify/develop resources, e.g. model lessons and teaching strategies.**
  There are several examples within Arizona identifying and sharing Best Practices research and results. Project Venture and Global Connections (K-12) are Technology Innovation Challenge Grants that focus on technology integration professional development. Both have models of professional development that can be easily replicated by schools throughout the state. Extensive evaluation data and tools are available through

both projects. Another project, Preparing Tomorrow's Teachers to Use Technology (PT3), a US Department of Education grant, focuses on pre-service teachers, higher education faculty, and K-12 partnership to provide professional development.

A second approach to identifying resources and models has been the ASSET effort to provide on-line professional competency assessment (over 9,000 teachers have taken the MyCompass inventory of skills in the first eight (8) months of its existence in Arizona. This particular inventory also points the individual to sources of support and training for those areas indicating need. Further it has the capability of customizing across the state to take advantage of LEA developed resources that they want to distribute internally and share externally. WestEd has also provided personnel support to identify methodologies for gathering and interpreting data related to competencies.

- **Monitor, evaluate and review progress of technology initiatives.**
  Historically built into every LEA technology plan was a system for reporting progress on technology initiatives. The Regional Training Centers and the Arizona Department of Education have had the responsibility for managing that function. This plan has, as a major component, an accountability measure that requires more structured and visible demonstration of progress and effort on the part of the LEAs. With the creation of the Superintendent’s Blue Ribbon Task Force on Technology, the group will be charged with ensuring steady and consistent implementation of the plan.

E. Goals, Objectives and Strategies with Accountability Measures

Goal 1: Improve student academic achievement through the use of technology in elementary and secondary schools with a target of fully integrating technology into the academic curriculum by December 2006.
The Department will work with states and districts to ensure that schools have access to student assessment data in order to inform school improvement strategies and to develop specific interventions for individual children.

Objective	Strategy	Accountability Measure
1.1 Ensure that all students have educational opportunities to achieve academic success (including constant and consistent improvement) through the use of proven strategies of teaching and learning (research-based successful practices).	**1.1.1** Develop dissemination channels for reaching all K-12 personnel with the latest in teaching/learning strategies supported by research-based instructional methods and practices. (Best Practices).	**1.1.1.1** Number of current and continuing dissemination channels. Number of web-based and collegial sharing techniques of research-based practices.
	1.1.2 Continue to review, revise and refine the Arizona Academic Standards through annual or bi-annual (every 2 years) academic review of the standards, including analysis and recommendations for Accountability Measures.	**1.1.2.1** Completion of Technology Standards revision by December 2003. **1.1.2.2** Technology Standards for Students are brought to the State Board of Education to reflect the changes in the field and the progress in implementation and curricular integration.
	1.1.3 Convene a statewide task force to develop a systematic document or device to demonstrate integration of technology skills and objectives with other academic standards of achievement.	**1.1.3.1** Completion of a concrete document or device that is shared within the state including the target date of December 2006.
	1.1.4 Provide encouragement and training to promote LEA development of rigorous web-based learning for K-12 personnel designed to ensure	**1.1.4.1** Number of the documents or devices. **1.1.4.2** Number of accesses by personnel and students to

Objective	Strategy	Accountability Measure
	that all classroom teachers are "highly qualified" by federal standards**.**	web-based learning acknowledged by the state.
	1.1.5 Fund training in the use of Internet-based data disaggregation tools for schools, district, and state education agencies.	**1.1.5.1** Number of trainings given and participant evaluations.
	1.1.6 Ensure that "failing" schools or those with highest numbers of percentages of children in poverty receives assistance in applying for technology resources to support increased achievement.	**1.1.6.1** Number of schools with highest percentages of children in poverty or designated as "failing" under Title 1 receive support in writing plans and getting funding.
	1.1.7 Use distance learning for students to improve achievement both through "traditional" settings and for at-home or alternative location opportunities.	**1.1.7.1** Amount of increase in funding of distance learning **1.1.7.2** Number of academic credits granted and completion rate for students.
	1.1.8 Develop policy and procedure to support funding for student use of distance learning in a K-12 environment.	**1.1.8.1** Funding provided for distance learning credit for students (virtual environments).
1.2 Ensure that each Arizona school has a plan for meeting the Technology Education Standards of the Arizona Academic Standards.	**1.2.1** Provide all LEAs with access to quality resources, support systems and training to support the Technology Education Standards.	**1.2.1** Number of District level Governing Boards who approve Technology Plans (or revision less than 2 years old), that adopt the Technology Education Standards and place curricula emphasis on their inclusion in instructional time. **1.2.2** Number of school level Technology Plans that support the District's objectives but may have even more local

Objective	Strategy	Accountability Measure
		nuances.
	1.2.2 Ensure that "failing" schools or those with highest numbers of percentages of impoverished children get assistance in writing thoughtful and productive technology plans.	**1.2.2.1** Number of schools with highest percentages of children in poverty or designated as "failing" under Title 1 that receive individual support in writing plans. Records of support efforts.
1.3 Encourage innovative practices that will lead to increased student achievement, especially supporting the early reading initiative[8].	**1.3.1** Provide incentives (bonus points) for LEAs inside and outside the formula system to use the competitive grant application process to try new approaches in underperforming and "failing"[9] schools.	**1.3.1.1** Rubric scores of grant applications that provide points for innovation related to reading achievement.
	1.3.2 Determine a minimum funding pattern to be supportive of quality innovation including the need to share and disseminate plans and results in a timely manner.	**1.3.2.1** The per-teacher cost of the most recently funded competitive grants deemed successful (ADE will calculate) and apply as a formula for minimum funding in competitive applications[10].
1.4 Provide access to available resources reflecting scientifically based research and related best practices focused on improving student achievement. [11].	**1.4.1** Assign the portal development task to a curriculum knowledgeable agency to create and maintain.	**1.4.1.1** Assignment of Portal development in December 2003.
	1.4.2 Create a portal on a totally accessible site that has categorized hyperlinks to available resources.	**1.4.2.1** Publishing of the Portal for general use by December 2004.

[8] *The Department will test the relative effectiveness and impact of strategies relating to adolescent literacy, mathematics and science achievement, career-related academies, education technology, career and technical education, dual or concurrent enrollment in postsecondary education, career awareness and career development.*

[9] Terminology from Arizona's School Accountability System Technical Manual.

[10] This is NOT intended to buy a "package" and plop it into place and expect it to make a difference.

[11] *The Department will create and maintain an online database of quality research on topics relevant to educational practice, as determined in part by the fast response surveys. Users will be able to ascertain the quantity, quality, relevance, and direction of the evidence with respect to a wide and expanding range of topics.*

Objective	Strategy	Accountability Measure
	1.4.3 Prominently post best practice models on both the ASP portal and on the ADE websites.	**1.4.3.1** Regular review of the portal.
	1.4.4 Use electronic data collection for inventory data by contracting with agency to incorporate existing data into existing survey devices (MyCompass) and tie into application and reporting processes.	**1.4.4.1** Number of LEAs who use electronic reporting on standardized devices.
	1.4.5 Expand student research options to include school Library Media Centers connected and sharing data and services with public and corporate agencies.	**1.4.5.1** Students and staff demonstrate expanded use of resources beyond the walls of the physical LEA
	1.4.6 Fund data collection of existing shared services projects in the state.	**1.4.6.1** Number of projects and reports generated.
	1.4.7 Expand student access to quality reference and research materials through joint projects between Public and School Library Media Centers.	**1.4.7.1** Access by students across agency boundaries to Library Media Center materials.
	1.4.8 Ensure reliable connectivity both within LEAs and to the internet.	**1.4.8.1** Number of LEAs who have better than 99% connectivity

Goal 2: Ensure that quality teachers, staff and administrators are involved in Arizona educational institutions and that they are proficient in the use and integration of technology through professional development activities.
(NOTE: at least 25% of any federal funds received will be allocated to Professional Development).

Objective	Strategy	Accountability Measure
2.1 All teachers and staff will have incentive (both intrinsic and extrinsic) to become competent in the technology skills.	**2.1.1** Provide documentation of learning for all participation that can be used for re-certification or pay incentives.	**2.1.1.1** Number of on-line assessment instruments allows the state to view and demonstrate progress in skills.
	2.1.2 Acknowledge on an annual basis, in tangible format, those LEAs who have supported professional development in the area of technology and achievement**.**	**2.1.2.1** Number of LEAs who receive verification of documented progress.
	2.1.3 Develop recognition systems that encourage teachers to remain in the profession and develop long-term relationships with schools and students with additional incentives focused on LEAs serving underperforming students.	**2.1.3.1** Composite and comparative data using on-line resources such as MyCompass.
2.2 Provide on-line and other distance learning opportunities as well as one-on-one options for all K-12 personnel.	**2.2.1** Establish a portfolio of learning opportunities with special designation for those targeting English Language Learners and impoverished settings.	**2.2.1.1** Development of directory of opportunities with emphasis on availability to individuals outside of a limited LEA by December 2003
	2.2.2 Ensure that all K-12 personnel have access before and after working hours to appropriate connected technologies to use on-line and other distance learning options**.**	**2.2.2.1** Number of accesses and options. 2.2.2.2 Resources from PDLA shared with state LEAs.
	2.2.3 Create an information alert system to reach every individual in the K-12 environment making them	**2.2.3.1** Development of the system by December 2003 **2.2.3.2** Charted measures of

Objective	Strategy	Accountability Measure
	aware of the options available and how to access these.	usage over time.
	2.2.4 Provide technical assistance for both skills and integration to LEAs requesting assistance**.**	**2.2.4.1** Number of assistance efforts and summary report of LEA evaluations of service
	2.2.5 Provide encouragement and training to promote LEA development of web-based learning for K-12 personnel for certification.	**2.2.5.1** Numerical records of the State Board of Education for approval requests and of granting requests related to on-line and distance learning opportunities.
		2.2.5.2 Number of randomly sampled teacher certification renewal documents for evidence that distance learning or on-line offerings is being utilized**.**
2.3 Provide a competency self-assessment instrument with recommendations for professional development for all K-12 personnel as an on-line option (Based on NETS and/or My Compass currently available in Arizona).	**2.3.1** Ensure that all K-12 personnel have access before and after working hours to appropriate connected technologies to take an on-line self-assessment.	**2.3.1.1** Independent audit to ensure actual availability, awareness of potential users and user satisfaction (a random sample is suggested).
	2.3.2 Create information alert systems that reach every individual in the K-12 environment informing them of available options	**2.3.2.1** Development of alert system by November 2002.
	2.3.3 Correlate the self-assessment to a matrix of learning options that complement needs or desires.	**2.3.3.1** Numbers and responses to self-assessment instruments (being scrupulous to maintain privacy of participants)

Objective	Strategy	Accountability Measure
2.4. Ensure that all pre-service and inservice professional development for teachers and administrators includes competencies in technology use and integration to meet the Professional NETS (ISTE).	**2.4.1** Disseminate the NETS competencies to all pre-service training institutions in Arizona.	**2.4.1.1** Number of state certification and re-certification standards that reflect the desire for technology competency in new personnel.
	2.4.2 Utilize the expertise within the county service support model to assist in the dissemination of standards and the development of integration skills.	**2.4.2.1** Evidence of increased integration of technology into all curricular content.
2.5 Encourage innovative practices to support teacher professional development and retention (especially in rural and inner city areas) through competitive grants process[12].	**2.5.1** Provide incentives (bonus points) for LEAs inside and outside the formula system to encourage professional development leading to job satisfaction and retention.	**2.5.1.1** Rubric scores of grant applications that provide points for innovation related to retention and on-site professional development.
	2.5.2 Determine a minimum funding pattern to be supportive of quality innovation including the need to share and disseminate plans and results in a timely manner.	**2.5.2.1** The per-teacher cost of the most recently funded competitive grants deemed successful (ADE will calculate) and apply as a formula for minimum funding in competitive applications
	2.5.3 Utilize the federally mandated 25% of all funding be used for professional development	**2.5.3.1** The rubric used to evaluate grant applications must ensure that a minimum of 25% of funding is used in professional development.
2.6 Develop specific professional development packages to be delivered to Governing Board or Board of Directors members that gives background on the research connecting student achievement and the use of technology.	**2.6.1** Create and field test professional development packages that can be locally delivered.	**2.6.1.1** Number of packages delivered. **2.6.1.2** Evaluations from participants

[12] We will encourage school districts to develop and implement new incentive and compensation systems to attract and retain teachers of mathematics and science.

Objective	Strategy	Accountability Measure
	2.6.2 Utilize statewide grants such and other organizations (for example, LIT/ NAU Gate's Foundation Grant and Arizona School Board Association) to impact key decision makers' skill and competence in data-driven decisions.	**2.6.2.1** Evaluations from such training and development of data warehouses within LEAs for administrative use. (TAGLIT, annual technology inventory report, self-assessments such as ASSET's 360° Full Circle Achievement Assessment Suite, which replaced MyCompass.)

Goal 3: Ensure that all K-12 educational institutions have the capacity, infrastructure, staffing, and equipment to meet academic and business needs for effective and efficient operations.

Objective	Strategy	Accountability Measure
3.1 All facilities will meet standards of physical structure for health and safety and effective educational use	**3.1.1** Continue "Students FIRST" initiatives for maintenance of existing facilities including funding for hardware and software replacement.	**3.1.1.1** Results of independent audit indicating LEAs meet standards. **3.1.1.2** Number of LEA plans and purchases taking into account the need for standardization to ensure interoperability and consistency of purpose[13]**.**
3.2 All facilities will meet minimum standards of technology infrastructure and hardware placement	**3.2.1** Continue advisory board type activities to determine what "minimum" should be – update annually.	**3.2.1.1** Results of independent audit indicating LEAs meet standards. **3.2.1.2** Number of school site councils and similar agencies minutes that indicate they have been active in the facilities review process.
	3.2.2 Ensure that the digital divide is eliminated for students by exploring alternative connectivity (PDA, wireless, distance learning, etc) and programs for technology in students' homes.	**3.2.2.1** Study of need and recommendations to appropriate agencies/ personnel.
3.3 Establish policies and procedures whereby the infrastructure for broadband Internet connectivity delivered to public school classrooms is regularly upgraded to provide capacity commensurate with	**3.3.1** SFB places proactive pressure on carrier service providers to extend the backbone into every geographic area in the state.	**3.3.1.1** Percent/ number of connectivity goals set for state, districts and schools met annually.

[13] *Create an efficient and integrated delivery system…use new technologies and integrate systems by eliminating, consolidating and redesigning … legacy systems to improve service, cut costs and reduce the improper payments…*

Objective	Strategy	Accountability Measure
state-of-the-art information systems delivery.[14]		
	3.3.2 County service support model provides technical assistance to LEAs needing support especially small, rural or isolated units.	**3.3.2.1** Service logs of county service support model.
	3.3.3 Encourage LEAs to apply for telecommunication discounts (E-RATE) and use the funds to upgrade and maintain the infrastructure. The ADE will provide technical assistance.	3.3.3.1 Summaries of funding received through E-Rate.
3.4 Ensure continued refinement of the data collection systems with the state's educational institutions in terms of functions, capacity, software, user-friendly characteristics and support.	**3.4.1** Continually review current operations, with feedback from the end users, for policies, procedures or systems that need refinement.	**3.4.1.1** Number of reports that are completed on time, correct and analysis done within the established time limits
	3.4.2 Provide technical support through a service support model for LEAs to access data reports that will allow them to make data driven decision (SAIS compliant)	**3.4.2.1** Evidence of state support in evaluating, designing, procuring data warehouse programs, protocols that mirror both state and federal mandates for data and LEAs' need for data driven decision support.
	3.4.3 Implement a data warehouse to provide data collection for analysis and utilization in date driven decision making.	3.4.3.1 Decisions are based on information from the data warehouse.
3.5 Ensure continued maintenance support of existing technology and networking both at the state and local levels.	**3.5.1** Develop policies, procedures, funding and personnel or contracts to deliver 100% reliability.	**3.5.1.1** Number of LEAs with 100% up-time on all LEA and state technology resources.
3.6 Ensure uninterrupted ISP service to LEAs with sufficient capacity to enable both academic and administrative	**3.6.1** Conduct a study of the potential of having ADE serve as ISP for the LEAs of the state.	**3.6.1.1** Report of the task force formed to review the potential and make recommendations.

[14] Sustainability is a critical factor in the philosophy of the Framework and this Technology Plan

Objective	Strategy	Accountability Measure
efficiency.		
3.7 Increase communications between ADE and LEAs in relation to SAIS upgrades in support of Proposition 301 mandates.	**3.7.1** Publicize the online MIS bulletin board and in MIS monthly newsletters. http://www.ade.az.gov/sais/	**3.7.1.1**. Conduct a survey with the LEAs Student Information Management personnel the level of support satisfaction.

Goal 4: Ensure that all K-12 institutions will be positively involved in collaboration and partnerships that are supportive of technology use and curricular integration.
States and districts will be required to publish report cards that provide school performance information to parents. Children attending failing or unsafe schools will have the opportunity to attend better public schools….

Objective	Strategy	Accountability Measure
4.1 All facilities (including computer labs) are available to the community as appropriate to support life long learning.	**4.1.1** Encourage K-6 to involve parents in family technology events hosted at the LEA.	**4.1.1.1** Number of invitations, flyers, memorabilia of events **4.1.1.2** Number of policies that support collaborations and partnerships.
	4.1.2 Provide public support for business and industry that encourages employee participation in educational efforts (volunteers, etc) to show real-world examples and uses of technology.	**4.1.2.1** Amount of public acknowledgment by business and industry that indicate policies that support employee participation.
	4.1.3 Emphasize in site councils (legislative mandate for all public schools) that technology is an "academic" skill as well as a life skill basic and that is needs to be integrated into core academics.	**4.1.3.1** Minutes (public records) indicate that technology is a curricular topic at least twice during the year. **4.1.3.2** Amount of stakeholder involvement from the parental sector increases in planning and oversight LEA groups.
4.2 Establish Adult Literacy Connections for every K-12 site.	**4.2.1** Involve local agencies to determine the extent and type of adult literacy support needed.	**4.2.1.1** Documents, minutes of meetings, logs of contact efforts and results.
	4.2.2 Develop LEA supported volunteer training programs that incorporate literacy training for the volunteers with support for the LEAs populations. (Reference OASIS – intergenerational literacy volunteer project)	**4.2.2.1** Number of such programs and reports of results.
4.3 Encourage innovative	**4.3.1** Provide incentives (bonus	**4.3.1.1** Rubric scores of

Objective	Strategy	Accountability Measure
practices to support equity through competitive grants process.	points) for LEAs inside and outside the formula system to encourage creative planning.	grant applications that provide points for innovation related to collaboration, partnerships and parental involvement (including adult literacy).
	4.3.2 Determine a minimum funding pattern that is supportive of quality innovation including the need to share and disseminate plans and results in a timely manner.	**4.3.2.1** The per-teacher cost of the most recently funded competitive grants deemed successful (ADE will calculate) and apply as a formula for minimum funding in competitive applications.
4.4 Ensure statewide communication between all agencies allowing the dissemination of technical news, information and programs.	**4.4.1** Create catalogs of programs and resources	**4.4.1.1** Number of catalogs, lists and forums.
	4.4.2 Create communication forums for teacher-to-teacher, teacher-to-university faculty, and teacher-to-business communities.	**4.4.2.1** Evidence of forums with random sample satisfaction survey of participants.
	4.4.3 Create forums for discussions between groups with similar interests or common topics.	**4.4.3.1** Evidence of forums with random sample satisfaction survey of participants.
4.5 Explore the use of technology to create safer school environments without infringing on human rights.	**4.5.1** Research and develop proposals for ensuring student and staff physical safety through the use of technology (beyond electronic filtering of networks)[15].	**4.5.1.1** Number of reports delivered to State Board of Education and/or disseminated to districts for consideration or School Facility Board funding.
4.6 Sponsor venues that encourage LEAs to share programs and successes.	**4.6.1** Host (or provide financial support for partners) venues that encourage program sharing such as the AzTEA and MEC conferences.	**4.6.1.1** Review of project summary reports and direct on-line survey results collecting data on sharing and implementations.

[15] *…will periodically update and validate the … current risk assessment and security plan and that certification and accreditation are in place (for electronic business transmissions)*

Goal 5: Ensure that all K-12 resources are available for all students, regardless of race, ethnicity, income, geographical location, or disability, so they can become technologically literate by the end of eighth grade and achieve their academic potential.
Effective strategies for students with disabilities and English Language Learners will be given special attention.

Objective	Strategy	Accountability Measure
5.1 Disseminate information about assistive technology in general, and about the use of technology to meet individual needs of students with disabilities.	**5.1.1** Utilize existing agencies within the state (both public and non-profit) to identify databases of information available.	**5.1.1.1** Number of databases identified and documentation of compiled resource listing.
5.2 Provide technical assistance with assistive technology products.	**5.2.1** Utilize existing agencies within the state (both public and non-profit) to provide technical assistance with emphasis on group involvement such as conferences, workshops and focus groups.	**5.2.1.1** Year 1, schedule of efforts and involvement records. Year 2 – Number of special needs students in the academic performance assessment database that indicate signs of increased achievement. **5.2.1.2** Number of assistance efforts and summary report of LEA evaluations of service.
5.3 Facilitate assistive technology assessments	**5.3.1** Provide LEAs with support systems or contacts to develop assistive technology assessments for students.	**5.3.3.1** Survey parents concerning assistive technology to support special education students.
5.4 Encourage innovative practices to support equity through a competitive grants process.	**5.4.1** Provide incentives (bonus points) for LEAs inside and outside the formula system to encourage creative planning. **5.4.2** Determine a minimum funding pattern to be supportive of quality innovation including the need to share and disseminate plans and results in a timely manner.	**5.4.1.1** Rubric scores of grant applications that provide points for innovation related to reading achievement. **5.4.2.1** The per-teacher cost of the most recently funded competitive grants deemed successful (ADE will calculate) and apply as a formula for minimum funding in competitive applications.

Objective	Strategy	Accountability Measure
5.5 Ensure that all LEAs have policies and procedures that encourage equal access to technology and support without regard to subject or grade level, but rely on purpose and effectiveness as criteria.	**5.5.1** Provide sample policies and procedures and examples of successful placement and use to LEAs.	**5.5.1.1** Number of examples and documentation for LEA of successful placements (i.e. increased achievement as a resulting factor). **5.5.1.2** Student opportunities reflect the use of technology to meet needs through distance learning and alternative formats to access accredited classes.
5.6 Ensure that all LEAs with English Language Learners use technology to increase English Proficiency.	**5.6.1** Develop a database of effective ELL software and technology-related activities.	**5.6.1.1** Number of ELL students attaining proficiency in English.
5.7 Develop strategies and resources that all LEAs with impoverished students can tap into for support in bridging the digital divide.[16]	**5.7.1** Develop a funding support stream (in-kind or financial) that puts technology directly into the hands of students in "failing" schools along with parental and school training.	**5.7.1.1** Tracking system reports on placement of technology directly to students and a three-year academic achievement profile developed starting in 2004 (Solutions Team rubric for Technology Integration). **5.7.1.2** Document efforts to connect impoverished and disenfranchised students with technology in non-school settings (i.e. publicize sources of support such as STRUT, Public facilities such as local libraries, etc) **5.7.1.3** Document the impact of after-school programs with technology components in helping students increase access and achievement.
5.8 Support LEAs in developing data management systems that provide information about students in poverty and their technology access, technology support and academic achievement	**5.8.1** Identify a limited number of pilot sites that will focus on the impact of technology access (at home and school) on student success.	**5.8.1.1** Collection and analysis of achievement and implementation data.

[16] Revision of homebound status enables students to participate in distance learning.

Goal 6: Develop a continuous process of evaluation and accountability for the use of Educational Technology as teaching/learning tool, as measurement and analysis tool for student achievement and as a fiscal management tool. *Information technology initiatives will dramatically reduce the data collection burden on state and local officials by seamlessly collecting and disseminating performance information. Increased flexibility will be a core principle incorporated in all legislative proposals.*

Objective	Strategy	Accountability Measure
6.1 Disseminate information about current and proposed accountability devices, techniques and programs.	**6.1.1** Use web technology, in-person contact and written notices to maintain open communication about the use of technology in assessment.	**6.1.1.1** Statistics concerning the use of technology to collect, compile, analyze and disseminate evaluation and progress results.
6.2 Develop methods allowing students to take tests and measurements on-line to facilitate both their involvement and the compilation of results information.	**6.2.1** Work within the Department of Education and with vendors to develop economical techniques for using the inherent resources in the school in the form of networked computers to "take" tests.	**6.2.1.1** Number of student assessments reported to the state on-line and in real-time
6.3 Augmentation of the current SAIS System to provide a link utilizing unique student identification numbers with student testing achievement data and test scores, needed for accurate and timely assessment of learning for students.	**6.3.1** Analyze the results of programs used in 2001. 02 and 03 and make appropriate adjustments to the system.	**6.3.1.1** Error free reporting and direct correlation between standards and skills and competencies tested is evident.
	6.3.2 Provide a functional prototype of a data warehouse with data elements in a working micro setting for peer review.	**6.3.2.1** Teachers, parents, students will have the ability to view student achievement data via the Internet. LEAs can download the data into their local SMS for their own analysis.
	6.3.3 Provide on-going, hands on professional development for administrators and teachers in assessment evaluation and appropriate responses.	**6.3.3.1** Achievement results indicating improvement of one year growth for every calendar year of instruction.

Objective	Strategy	Accountability Measure
		6.3.3.2 Number of parents and citizens who indicate satisfaction with the educational system in survey evidence.
6.4 Create a management information system using electronic resources to improve service to the state.	**6.4.1** Continue to refine the electronic reporting system by ensuring reliable connections and stable software[17].	**6.4.1.1** Using 2003 RTC trouble calls as base line, number of reported problems.
	6.4.2 Implement a data warehouse and analysis tools and can be utilized by LEAs.	**6.4.2.1** Reported and analyzed results of pilot
6.5 Ensure that administrative needs are addressed and solutions developed.	**6.5.1** Use existing inventories and reports to determine a priority of administrative needs in the state.	**6.5.1.1** Needs assessment from all LEAs.
	6.5.2 Compile the needs assessment at the state level and determine ideal and immediate solutions.	**6.5.2.1** Compilation and analysis of needs assessment with solutions.
	6.5.3 Implement solutions suggested by 6.5.2.	**6.5.3.1** Funding and delivery of solutions.
6.6 Promote research to identify most effective uses of technology.	**6.6.1** Quantify student uses by type and relate the usage to achievement.	**6.6.1.1** Use ASP usage and school-reported usage to compare with achievement.
6.7 Develop and disseminate periodic survey instruments that LEAs can utilize in collecting the data required by state and/or national agencies. These should be capable of electronic delivery via web or email and be self-compiling.	**6.7.1** Provide all LEAs with an electronic (on-line or web based) survey software along with training and support in utilization.	**6.7.1.1** LEA results reported to ADE in compiled format so that data required in this plan is available potentially from the entire patron population.

[17] *Manage information technology resources, using e-gov, to improve service for the state.*

Goal 7: Develop a schema of current and future financing requirements to support this Arizona State Technology Plan.

The national strategic plan focuses on performance. It states in unambiguous language the measurable goals and objectives the department intends to achieve. It creates the base of an accountability system for this agency, as it works to imbue accountability throughout the nation's education system.

Objective	Strategy	Accountability Measure
7.1 Develop policy and procedure related to maintenance of hardware, software, infrastructure and security.	**7.1.1** Use research industry standards of maintenance costs and relate them to Arizona settings. [18]	**7.1.1.1** Number of policies and standards that are adopted and published.
7.2 Develop current and future funding requirements to support the plan implementation and provide for keeping the technology current including infrastructure.	**7.2.1** Identify current funding sources and projects and create avenues of exploration for new, consistent and dependable funding streams.	**7.2.1.1** Number of funding sources identified that will support the needs and programs of the plan.
	7.2.2 Develop guidelines that preclude using federal funds to supplant current funding	**7.2.2.1** National reports (Where Arizona emerges in the top 15 states for funding and supporting education K-12.)
7.3 Develop a funding formula and procedures that are equitable and reliable to maintain and support continual improvement in the technology "system" within the LEAs (including maintaining a strong leadership presence at the state level).	**7.3.1** Continue to maintain a positive working relationship with the legislature, business and industry.	**7.3.1.1** Amount of continuous, reliable funding.
	7.3.2 SFB advocates at the state government level to lobby for continued funding of technology.	**7.3.2.1** Amount of continuous, reliable funding.
7.4 Establish ADM formula funding for distance learning credit for students.	**7.4.1** Distance learning per student funding is part of budget formulary from the Arizona Department of Education.	**7.4.1.1** Availability of funds confirmed and used.
7.5. Ensure that all Title II D sub grantees grant application is of sufficient in size and duration to ensure success as	7.5.1 Applications are reviewed and charted to determine cost of implementation	7.5.1.1 Evaluation data indicates that the plan size and duration produced success.

[18] *The Department will implement productivity improvements through implementation of e-gov applications, customer relationship management, and supply chain management and knowledge management best practices, while at the same time protecting the privacy of our customers.*

Objective	Strategy	Accountability Measure
determined by the rubric and review process.	7.5.2 Annually review the grant process and make changes to meet the needs to the LEAs	7.5.2.1 Evidence of changes based on process. .

F. Strategies for Financing Technology

State-level financial support for educational technology

Source	Amount	Period available	Status	Purpose and Restrictions
ADE Regional Training Centers Funded through Title IID	*$1,600,000*	*one-year funding*	*4 Centers established in 1998 and operating*	*Professional development, technical assistance and support to LEAs statewide*
Legislature- Prop 301	*$445,000,000 estimated in year 1* *Will raise statewide sales tax by six-tenths of one percent.*	*Annual, beginning FY02 for 10 years*	*Approved by voters in November, 2000*	Approximately 85% of revenues generated are dedicated to K-12; directed to classrooms with an estimated increase of $350 per pupil.
ASSET – Arizona School Services Through Educational Technology	*$234,000*	*Annual*	*On-going*	*Provides educational videos, resources, and training to K-12 educators.*
ASSET – PBS TeacherLine		*2004-2005 final year for grant*		
ASSET – TEAMS (Los Angeles County Office of Education)	*$20,000*	*Annual*	*On-going*	*Provides online professional development courses*
E-Rate – FCC funding	*$65,000,000 average committed amount*	*Annual*	*On-going*	*Educational discount on telecommunication services*
Intel Teach to the Future Intel chip project referenced 3/2002	*$75,000*		*On-going*	*Professional Development Services to Local Education Agencies in good standing in the program.*
Students FIRST- Qwest Darcomm Telecommunications, Inc.	*$45,000,000*	*From 2000 to 6/30/05*	*On-going*	*Project provides connectivity, firewall, and filtering to all classroom computers statewide*
School Facilities Board/Cox/Learning Stations ASP Project	*~~$27~~,28,000,000*	*From 2001 to ~~2006~~ 2005*	*Schools are using it in a variety of ways.*	*Provides over 250 software programs via the Internet to educators, students statewide from home or school*

Source	Amount	Period available	Status	Purpose and Restrictions
Ed Tech block grants both formula driven and competitive (Title II D)	*$9,998,053*	*Funded year to year beginning in FY 2002*	*FY04 Budget approved*	*Provides technology funds for all LEAs through formula and competitive grants*
StRUT – community based training and recycled resources for schools			*By applications. Refurbished equipment with no operating system or software.*	

G. Timeline of Implementation

Goal, Objective & Strategy (strategy abbreviated for timeline)	Year 1 – 2002-2003 Task % done	Year 2 – 2003-2004 Task % done	Year 3 – 2004-2005 Task % done	Year 4 – 2005-2006 Task % done
1.1.1 Dissemination channels	Create 15%	Continue 40%	Continue 70%	Continue 90%
1.1.2 Academic standards	Review 3 ea 100%	Review 3 ea including Technology 100%	Review 3 ea 100%	Review 3 ea 100%
1.1.3 Taskforce for systematic integration	Create 25%	Publish 25%	Train 25%	Evaluate and Revise/ Train 20%
1.1.4 Promote web-based professional development	Create 25%	Create and Implement 50%	Create and Implement 75%	Create and Implement 100%
1.1.5 Technical assistance in writing	Provide 40%	Provide60%	Provide 90%	Provide 100%
1.1.6 Provide technical assistance to failing schools	Design 15%	Certify 45%	Implement 80%	Continue 90%
1.1.7 Distance learning for students	Design 15%	Certify 45%	Implement 80%	Continue 90%
1.1.8 Policies to support distance learning	Design 15%	Certify 45%	Implement 80%	Continue 90%
1.2.1 Access to resource	Provide 20%	Provide 40%	Provide 70%	Provide 90%
1.2.2 Technical assistance in writing a tech plan	Provide 40%	Provide 60%	Provide 90%	Provide 100%
1.3.1 Innovative competitive grants	Provide 60 %	Provide 70%	Provide 80%	Provide 100%
1.3.2 Determine funding pattern needed	Immediate 60%	Review 75%	Review 95%	Review 100%
1.4.1 Assign task for portal creation	Immediate 25%	Provide 50%	Provide 90%	Provide 100%
1.4.2 Create a portal	Provide 20%	Provide 40%	Provide 70%	Provide 90%
1.4.3 Best practices posting create portal				
1.4.4 Electronic data collection	Collect data 10%	Implement 30%	Continue 75%	Continue 90%
1.4.5 Expand student resources and research	Collect data 10%	Implement 30%	Continue 75%	Continue 90%
1.4.6 Fund the resources for research	Determine 10%	Process and allocate 20%	Purchase 70%	Continue 100%
1.4.7 Student access	Design 10%	Fund and place 30%	Continue 80%	Continue 100%
1.4.8 Ensure reliable connectivity	Review 10%	Fund and place 50%	Continue 70%	Continue 99%
2.1.1 Document adult learning	Provide 20%	Provide 40%	Provide 70%	Provide 90%
2.1.2 Acknowledge PD effort	Provide 20%	Provide 40%	Provide 70%	Provide 90%
2.1.3 Encourage teacher retention	Provide 20%	Provide 40%	Provide 70%	Provide 90%
2.2.1 Portfolio of learning opportunities	Provide 20%	Provide 40% and review	Provide 70%	Provide 90%
2.2.2 After-hours access	Provide 20%	Provide 40% and review	Provide 70%	Provide 90%
2.2.3 Information alert system	Provide 40%	Provide 60%	Provide 90%	Provide 100%
2.2.4 Technical assistance for integration	Provide 60 %	Provide 70%	Provide 80%	Provide 100%
2.2.5 Promote LEA web-based learning	Provide 20%	Provide 40% and review	Provide 70%	Provide 90%

Goal, Objective & Strategy (strategy abbreviated for timeline)	Year 1 – 2002-2003 Task % done	Year 2 – 2003-2004 Task % done	Year 3 – 2004-2005 Task % done	Year 4 – 2005-2006 Task % done
2.3.1 After-hours access self-assessment	Provide 20%	Provide 40% and review	Provide 70%	Provide 90%
2.3.2 Alert system of options	Provide 20%	Provide 40% and review	Provide 70%	Provide 90%
2.3.3 Self-assessment matrix of learning	Provide 40%	Provide 60%	Provide 80%	Provide 100%
2.4.1 Disseminate NETS competencies	Immediate 60%	Review impact 60%	Modify if needed 80%	Modify if needed 100%
2.4.2 Utilize REC to disseminate standards			Develop 10%	Implement 80%
2.5.1 Encourage competitive grant applications	Provide 60 %	Provide 70%	Provide 80%	Provide 100%
2.5.2 Determine minimum funding	Immediate 60%	Review 75%	Review 95%	Review 100%
2.5.3 Utilize federal mandate for training (25%) for all professional development			Implement in all new projects 50%	Annually 100%
2.6.1 Field test of governing board program	Immediate 15%	Provide 30%	Provide 60%	Provide 90%
2.6.2 Utilize grants to help decision makers			Continue 75%	Continue 25%
3.1.1 Continue facilities standards	Provide 60 %	Provide 70%	Provide 80%	Provide 100%
3.2.1 Continue advisory board activities	Provide 60 %	Provide 70%	Provide 80%	Provide 100%
3.2.2 Eliminate the digital divide	Provide 10%	Provide 40%	Provide 80%	Provide 100%
3.3.1 Proactive pressure	Provide 60 %	Provide 70%	Provide 80%	Provide 100%
3.3.2 Provide technical assistance on delivery modes.			Provide 60 %	Provide 70%
3.3.3. Encourage LEAs to apply for E-Rate discounts.			60%	70%
3.4.1 Review information gathering systems	Provide 60 %	Provide 70%	Provide 80%	Provide 100%
3.4.2 Provide technical/ financial support to develop data warehouses			Research 20%	Design/Demonstrate 50%
3.4.3 Implement a data warehouse			30%	100%
3.5.1 100% reliability operation of systems	Explore 10%	Recommendation 20%	Funds if appropriate 80%	Provide 100%
3.6.1 ISP source of service	Explore 10%	Recommendation 20%	Funds if appropriate 80%	Provide 100%
3.7.1 Use successful systems to recommend staffing patterns for LEA			Research 20%	Design/Demonstrate 50%
4.1.1 Facilities are available	Immediate 15%	Provide 30%	Provide 60%	Provide 90%
4.1.2 Support business/ industry participation	Provide 40%	Provide 60%	Provide 80%	Provide 100%
4.1.3 Site council involvement	Immediate 15%	Provide 30%	Provide 60%	Provide 90%
4.2.1 Involve local agencies/ Adult Literacy	Immediate 15%	Provide 30%	Provide 60%	Provide 90%
4.2.2 Volunteer training	Immediate 15%	Provide 30%	Provide 60%	Provide 90%
4.3.1 Incentives for creative planning	Immediate 60%	Review 75%	Review 95%	Review 100%

Goal, Objective & Strategy (strategy abbreviated for timeline)	Year 1 – 2002-2003 Task % done	Year 2 – 2003-2004 Task % done	Year 3 – 2004-2005 Task % done	Year 4 – 2005-2006 Task % done
4.3.2 Determine minimum funding	Immediate 60%	Review 75%	Review 95%	Review 100%
4.4.1 Create catalogs of resources	Provide 40%	Provide 60%	Provide 80%	Provide 100%
4.4.2 Listservs for teacher-to-teacher	Immediate 15%	Provide 30%	Provide 60%	Provide 90%
4.4.3 Forums for discussions	Provide 40%	Provide 60%	Provide 80%	Provide 100%
4.5.1 Technology to support safety	Develop 40%	Publish 50%	Act on 80%	Continue 100%
4.6.1 Host venues that encourage program sharing			Provide 30%	Provide 60%
5.1.1 Identify databases of information	Immediate 15%	Provide 30%	Provide 60%	Provide 90%
5.2.1 Utilize existing agencies for training.	Immediate 60%	Review 75%	Review 95%	Review 100%
5.3.1 Support system for assistive technology assessment	Immediate 60%	Review 75%	Review 95%	Review 100%
5.4.1 Provide incentives for creative planning	Immediate 60%	Review 75%	Review 95%	Review 100%
5.4.2 Determine a minimum funding pattern	Immediate 60%	Review 75%	Review 95%	Review 100%
5.5.1 Samples policies and procedures	Provide 40%	Provide 60%	Provide 80%	Provide 100%
5.6.1 Database of ELL software & technology	Research 10%	Publish 50%	Continue 80%	Continue 100%
5.7.1 Develop funding support to bridge digital divide			Determine cost 15%	Develop funding 50%
5.8.1 Identify pilot sites to test impact on concurrent technology (home/school) on success			Design 20%	Conduct study 40%
6.1.1 Accountability communication	Immediate 35%	Continue 60%	Continue 85%	Continue 100%
6.2.1 Students use technology for assessments	Research 20%	Design and Implement 40%	Provide 60%	Provide 85%
6.3.1 Analyze results of programs 2001/2002/2003	Immediate 35%	Revise 60%	Revise 80%	Revise 100%
6.3.2 Pilot SAIS compliant data warehouse				100%
6.3.3 Provide hands on PD	Design 30%	Fund 50%	Implement 80%	Complete 100%
6.4.1 Refine reporting system	Immediate 70%	Continue 85%	Continue 95%	Continue 99%
6.4.2 Analysis of data warehouse pilot		100%		
6.5.1 Inventories to determine priority	Analysis 20%	Implement 100%		
6.5.2 Compile needs assessments	Design 10%	Complete 100%		
6.5.3 Provide administrative solutions statewide	Design 30%	Fund 50%	Implement 80%	Complete 100%
6.6.1 Promote research	Immediate 10%	Continue 50%	Continue 5%	Continue 100%
6.7.1 Provide LEA with survey software			Determine cost 15%	Implement 50%
7.1.1 Industry standards of cost	Immediate 60%	Review 75%	Review 95%	Review 100%
7.2.1 Funding sources	Immediate 60%	Review 75%	Review 95%	Review 100%
7.2.2 Guidelines to prevent supplanting	Immediate 60%	Review 75%	Review 95%	Review 100%
7.3.1 Positive working relationship	Immediate 60%	Review 75%	Review 95%	Review 100%

Goal, Objective & Strategy (strategy abbreviated for timeline)	Year 1 – 2002-2003 Task % done	Year 2 – 2003-2004 Task % done	Year 3 – 2004-2005 Task % done	Year 4 – 2005-2006 Task % done
7.3.2 Advocate for continuous funding	Immediate 60%	Review 75%	Review 95%	Review 100%
7.4.1 Funds for distance learning from ADM data	Study 10%	Budget 30%	Implement 70%	Continue 100%
7.5.1 Applications are reviewed			100%	100%
7.5.2 Annually review grant process			100%	100%

H. Resources

One of the basic tenets of the Framework used to develop this plan is "Providing access to resources along with time and support to develop educational technology competency represents the most logical means by which to ensure effective curriculum integration." Further, all the partners listed in the Plan Participants section have indicated they consider themselves resources to the state. Additionally, groups that have profound support features and functions include:

ADE technical support and assistance, program monitoring, Troops to Teachers

Arizona School Facilities Board with the **ASP** project (Cox Educational Network/Learning Station with a software package) and networking project (Qwest contract) and Darcomm for the Websense software and firewall

Arizona State University

Arizona State University –West

ASSET – TeacherLine and other on-line professional development options, MyCompass (which has changed to 360° Full Circle Achievement Assessment Suite)

AzTEA – Best Practices, Technology Planning support and models, Professional Development

Cisco and Microsoft Networking Academies

COPI (PT3 grant) Robin Ward - rward@email.arizona.edu Co-Principle Researcher

Community College Districts statewide

CRESMET – Center for Research on Education in Science, Mathmatics, Engineering and Technology created the Framework to Promote State-wide Technology Integration in K-23 Education: Preparing Arizona Students For Future Success. Arizona State University. Chaired by Dr. Don Evans.

E-Rate – hardware, software, connectivity, personnel for support

K-12 Gates Grant, Dr. Patty Horne, Director – AZ K-12 Leadership Academies

Intel – Teach to the Future granting process.

Northern Arizona University - supporting on-line credit for TeacherLine courses.

Preparing Tomorrow's Teachers to Use Technology PT3 - Universities

Project Venture http://www.creighton.k12.az.us/projectventure

Regional Training Centers – Flagstaff, Tempe, Tucson, San Simon. This model will end 6/30/05. A new county-based support model will be in place.

RTEC - Network of Regional Technology in Education Consortia – - http://www.rtec.org - A wealth of help on technology in education.

- Appalachian
- High Plains
- Mid-Atlantic
- North Central
- Northeast & the Islands
- Northwest
- Pacific
- South Central
- Southeast

STRUT (donated reconditioned technology to schools)

University of Arizona

I. Accountability and Evidence of Accomplishments

Arizona has a dual accountability system for student achievement underway. Annually students in grades 3, 5, 8 and 11 are given the Stanford 9 in Language and Math. These scores are provided for both the local institution and the public's review. Following the passage of the state proposition (common title: Proposition 301) there are penalties for institutions that do not provide for and achieve improvement in academic success for students who are underperforming.

The superintendent of public instruction shall assign a solutions team to an *underperforming school* or a School Failing to Meet Academic Standards comprised of master teachers, fiscal analysts and curriculum/assessment experts who are certified by the state board of education as Arizona academic standards technicians." In addition, the assignment of Solutions Teams to *underperforming schools* supports the superintendent's mission to provide high quality service to schools.

One team leader and two team members are assigned to each school identified as *Underperforming* under AZ LEARNS to conduct a serious, evidence-based inquiry. Team members will review and analyze achievement data, the Arizona School Improvement Plan and related performance information during on-site. The three-day visit, which will include interviews, classroom observations and focus group discussions, will culminate with the presentation of a Statement of Findings.

Over the last eight years Arizona has used funding from E-rate and federal sources as well as local funding to develop infrastructure that also supports excellence in the administrative end of the education process. The interoperability standards were first set forth in the TIEDS document and now by the standards of the School Facilities Board. All financial and accounting transactions are communicated and handled electronically. Further, every LEA has a "report card" on-line that allows the public to view their academic success (or failure) related to state and national standards.

J. Approval and Acceptance Process

The approval and acceptance process of the 2004 Revised/Updated Arizona State Technology Plan will include an open review by all stakeholders, especially those involved as representatives of various groups in the various planning initiatives. Please see Appendix A for a listing of all stakeholders involved. A concerted effort was made to expand beyond the initial review group from the first edition of the Plan. This review will take place over a very short time frame by electronic dissemination and feedback.

The revised plan will be submitted for approval to the Arizona State Board of Education in December 2004. The revised Technology Plan was approved on 1/24/05.

Appendix A - Plan Participants

The following table represents only some of the many individuals that had direct influence on the development of this plan. At least 200 others where indirectly involved in proofreading, submitting ideas and feedback. The continuing role of these plan participants is formalized in the Arizona Department of Education's Technology Advisory Committee formed in February, 2002 with its core membership from the CRESMET Framework writing group. The Advisory Committee will meet on a regular basis to monitor the plan and its implementation.

Partnership for an Arizona Statewide Systemic Technology Initiative		**Business-Initiated Steering Committee for K-12 Technology (BISC) cont.**
Arizona Association of County School Superintendents		Judson, Eugene - Teacher Representative
Arizona Department of Education (ADE)		Kilroy, Kathryn - ASSET
Arizona Education Association (AEA)		Kinder, Peggy – WestEd
Arizona Governor's Office (AGO)		Lentz, Charles - Arizona Education Association
Arizona K-12 Center (AZK12)		Levy, Michael - CRESMET, ASU
Arizona Learning Technology Partnership (ALTP)		Marona, Kim – Qwest
Arizona Procurement Office (APO)		Mast, Suzi - Teacher Representative
Arizona School Administrators (ASA)		McDermott, Patricia - Teacher Representative
Arizona School Boards Association (ASBA)		McMurphy, Helene - NCS Pearson
Arizona School Facilities Board (SFB)		Middleton, James - Arizona State University
Arizona Schools Services through Educational Technology (ASSET)		Owen, Cecilia- Superintendent, Coconino County
Arizona Technology Educators Alliance (AzTEA)		Poplin, Cathy - Project Venture and AzTEA
Business-Initiated Steering Comm. for K-12 Tech. (BISC) ‡		Thompson, Scott - Arizona Department of Ed (now with Dysart District)
Cisco Systems		Whiffen, Pam - Palo Verde Middle School
Cox Communications		
CRESMET, Arizona State University		**Plan Reviewers**
Government Information Technology Agency (GITA)		Regional Training Center personnel
Project Venture (PV)		AzTEA Board of Directors and officers
Qwest		Indiv. Members of the Tech. Standards Comm.
WestEd		
Business-Initiated Steering Committee for K-12 Technology (BISC)		**Financial Contributors to Framework Development**
Brush, Jeannie - CRESMET, ASU		Honeywell
Brush, Thomas - Educational Psychology, ASU		Intel Corporation
Clark, Barbara – Motorola		Lansdale Semiconductor
Contreras, Panfilo - Arizona School Board Association		Motorola, Inc.
Eitel, Connie - Cox Communications		Qwest
Eslamieh, Chula - Arizona State University		Salt River Project
Esque, Shelly - Intel Corporation		The Boeing Company
Euen, Tricia - Maricopa Community Colleges		
Evans, D. L - .CRESMET Director, ASU		**Editors**
Geiger, Philip - School Facilities Board		Dr. Ruth Catalano
Gordon, Janita - Arizona State University		Dr. Chris Johnson, University of Arizona
Gyampoh, Hayford - Arizona Department of Education		Chris Castillo, Arizona State Dept. of Education
Holmes, Bill - Sr. Staff Asst. Pima County Super. of Schools		
Horn, Patty J - Arizona K-12 Center		
Johnson, Chris - University of Arizona		
Jolayemi, Elaine - Sunset School		

2004 Superintendent's Blue Ribbon Task Force

Title	First Name	Last Name	Organization
Dr.	Robert	Atkinson	Arizona State University
Mr.	Dan	Bartch	Tucson Unified School District
Mr.	Jeff	Billings	PVUSD, IT Director
Ms.	Heidi	Blair	AZ K-12 Center
Dr.	Michael	Blocher	Northern Arizona University
Mr.	Chris	Canelake	Rodel Charitable Foundation of Arizona
Ms.	Susan	Carlson	Arizona Business & Education Coalition (ABEC)
Ms.	Barbara	Clark	Motorola
Dr.	Deborah	Dennison	Navajo Education Technology Consortium
Mr.	Jim	Dicello	AASBO-Paradise Valley Unified S.D.
Dr.	Matt	Diethelm	Arizona State Board of Education
Ms.	Deborah	Dillon	City of Phoenix Youth Education Programs
Dr.	Sally	Downey	East Valley Institute of Technology (EVIT)
Ms.	Martha	German	Apple
Ms.	Jennifer	Gresko	Maricopa County Community Colleges
Mr.	Matthew	Hensley	SRP
Dr.	Greg	Hickman	Center for the Future of Arizona
Dr.	Chris	Johnson	University of Arizona
Ms.	Kristen	Jordison	AZ State Board of Charter Schools
Mr.	Frank	Larby	Rim Country Middle School, ASA Principal
Ms.	Lisa	Long	Arizona Technology Educators Alliance
Ms.	Debra	Lorenzen	Arizona School Services through Educational Technology (ASSET) at Arizona State University
Dr.	Veena	Mahesh	Intel Corporation
Ms.	Suzi	Mast	Kyrene School District
Mr.	Lee	Mcllroy	Arizona State Board for Charter Schools
Mr.	Andrew	Morrill	Arizona Education Association
Mr.	Chris	Muir	Government Information Technology Agency (GITA)
Mr.	Jerry	Nunez	Estrella Foothills High School, Principal
Ms.	Cecilia	Owen	County Superintendents
Dr.	Helen	Padgett	International Society for Technology in Education (ISTE)
Mr.	Mike	Reed	Superintendent of San Simone District
Mr.	Robert	Rice	Arizona School Boards Association (ASBA)
Mr.	Martin	Shultz	VP of Government Affairs at Pinnacle West
Mr.	Russ	Smoldon	Salt River Project
Ms.	Liz	Whitaker	TUSD, Director of Technology
Dr.	Jim	Zaharis	Greater Phoenix Leadership, Inc.
Ms.	Tacy	Ashby	Arizona Department of Education
Ms.	Chris	Castillo	Arizona Department of Education
Mr.	Hayford	Gyampoh	Arizona Department of Education
Ms.	Cathy	Poplin	Arizona Department of Education
Ms.	Vicki	Salazar	Arizona Department of Education

Title	First Name	Last Name	Organization
Ms.	Ruth	Solomon	Arizona Department of Education
Ms.	Kathy	Wiebke	Arizona Department of Education

2004 Working Group of Blue Ribbon Taskforce to Revise Tech Plan

Name	Stakeholder Group
Chris Castillo	ADE/Blue Ribbon TF
Cathy Poplin	ADE/Blue Ribbon TF
Kathy Wiebke	ADE/Blue Ribbon TF
Jeff Billings	ADE/PVSD/Blue Ribbon TF
Debra Lorenzen	ASSET
Mandy Bachali	ASSET
Mark Becker (sub)	ASSET
John Ushman	ABEC (Arizona Business & Education Coalition)
Lisa Long	AzTEA/Blue Ribbon TF/Southern AZ
Susan Gerber	Charter School/ Northern AZ
Pam Bergstrom	Charter School/ Northern AZ
Jennifer Merrill	Gilbert SD
Jean Holte	Gilbert SD
Toni Reynolds	Glendale Elem SD
Helen Padgett	ISTE/ASU West/Blue Ribbon TF
Heidi Blair	K-12 Center/NAU/Blue Ribbon TF
Tom Clark	Madison SD
Barbara Clark	Motorola/Blue Ribbon TF
Rick Baker	Pendergast SD
Ruth Catalano	Retired - Westside AzTEA
Chris Johnson	U of A - Tucson/Blue Ribbon TF

2004 Additional Reviewers

Peggy Kinder	WestEd 2004
Pamela Batina	Pinal County School Office

Editors

Dr. Ruth Catalano	WestEd Consultant
Chris Castillo	Arizona State Dept. of Education
Cathy Poplin	Arizona State Dept. of Education

Appendix B -Summary of Stakeholders involved in plan design and development

There is a complete list of names, titles, addresses and telephone or email contact information for the majority of the persons who contributed to this plan. There are also minutes and executive summaries, web sites or other media, which summarize the meetings held to develop the agency's comprehensive technology plan. An "input and approval" review was done electronically March 14-17, 2002 reaching over 500 stakeholders. This technique will be standard as updates or revisions are considered over the life of the plan.

Parents	√ **Yes**	No
Community leaders	√ **Yes**	No
Representatives of libraries	√ **Yes**	No
Business Leaders	√ **Yes**	No
Students	√ **Yes**	No
School library media specialists	√ **Yes**	No
Teachers	√ **Yes**	No
School Administrators	√ **Yes**	No
Adult literacy providers	√ **Yes**	No
County education representatives	√ **Yes**	No

Appendix C: State Technology Plan Requirements Aligned with NCLB (Sec. 2413 State Applications)

State Technology Plan Requirements in NCLB	Compliance Notations
(1) An outline of the State educational agency's long-term strategies for improving student academic achievement, including technology literacy, through the effective use of technology in classrooms throughout the State, including through improving the capacity of teachers to integrate technology effectively into curricula and instruction.	Goals 1-7 with emphasis on goals 1, 2 and 5 (Section E) Key issues are identified in Section B, a description of Arizona's Technology Environment and in Section D with cross-reference to multiple aspects and strategies.
(2) A description of the State educational agency's goals for using advanced technology to improve student academic achievement, and how those goals are aligned with challenging State academic content and student academic achievement standards.	Goal 1 Student Achievement 1.1.1, 1.1.2, 1.1.4, 1.1.4, 1.1.5, 1.1.6, 1.1.7, 1.3. 1.4
(3) A description of how the State educational agency will take steps to ensure that all students and teachers in the State, particularly students and teachers in districts served by high-need local educational agencies, have increased access to technology.	Goal Student Achievement 1.1.7, 1.2.1, 1.2.2, 1.4.1, 1.4.2, 1.4.7, Goal 2 Professional Development 2.2.1, 2.2.2, 2.2.3, 2.3.1, 2.6.1 Goal 4 Partnerships 4.1 Goal 5 Equity 5.7.1 Goal 7 Funding 7.5.1
(4) A description of the process and accountability measures that the State educational agency will use to evaluate the extent to which activities funded under this subpart are effective in integrating technology into curricula and instruction.	Goal 1 Student Achievement 1.1.1. 1, 1.1.3.2 Goal 2 Professional Development 2.1.1.1, 2.4.2.1, 2.5.31, 2.6.1.2 Goal 3 Infrastructure 3.4.1.1, 3.7.1.1 Goal 4 Partnerships 4.6.1.1. Goal 5 Equity 5.3.3.1, 5.4.1.1, 5.5.1.1, 5.5.1.2, 5.7.1.2, 5.7.1.3 Goal 6 Evaluation 6.2.1.1., 6.3.1.1., 6.4.1.1, 6.7.1.1. Goal 7 Funding 7.2.1.1
(5) A description of how the State educational agency will encourage the development and utilization of innovative strategies for the delivery of specialized or rigorous academic courses and curricula through the use of technology, including distance learning technologies, particularly for those areas of the State that would not otherwise have access to such courses and curricula due to geographical isolation or insufficient resources.	Goal 1 Student Achievement 1.3, 1.1.4 Goal 2 Professional Development 2.5 Goal 4 Partnerships 4.1, 4.3 and 4.4 Goal 5 Equity 5.4
(6) An assurance that financial assistance provided under this subpart will supplement, and not supplant, State and local funds.	Goal 7 Funding 7.2.2.

State Technology Plan Requirements in NCLB	Compliance Notations
(7) A description of how the plan incorporates teacher education, professional development, and curriculum development, and how the State educational agency will work to ensure that teachers and principals in State receiving funds under this part are technologically literate.	Goal 2 Professional Development 2.3 and 2.5
(8) A description of— (A) how the State educational agency will provide technical assistance to applicants under section 2414, especially to those applicants serving the highest numbers or percentages of children in poverty or with the greatest need for technical assistance; and (B) the capacity of the State educational agency to provide such assistance.	Goal 1 Student Achievement 1.1.5, 1.2.2 Goal 2 Professional Development 2.2.4 Goal 3 Infrastructure 3.3.2, 3.3.3, 3.4.2 Goal 5 Equity 5.2, 5.2.1, 5.5, 5.7.1 Goal 6 Evaluation 6.4.1.1
(9) A description of technology resources and systems that the State will provide for the purpose of establishing best practices that can be widely replicated by State educational agencies and local educational agencies in the State and in other States.	Goal 1 Student Achievement1 1.1.1, 1.4.2
(10) A description of the State's long-term strategies for financing technology to ensure that all students, teachers, and classrooms have access to technology.	Goal 7 Funding
(11) A description of the State's strategies for using technology to increase parental involvement.	Goal 4 Partnerships 4.1.1 and 4.2 Goal 5 Equity 5.7.1
(12) A description of how the State educational agency will ensure that each subgrant awarded under section 2412(a) (2) (B) is of sufficient size and duration, and that the program funded by the subgrant is of sufficient scope and quality, to carry out the purposes of this part effectively.	Goal 4 Partnerships 4.3 Goal 7 Funding 7.5.1.1
(13) A description of how the State educational agency will ensure ongoing integration of technology into school curricula and instructional strategies in all schools in the State, so that technology will be fully integrated into the curricula and instruction of the schools by December 31, 2006.	Goal 1 Student Achievement 1.1.2.2, 1.1.3 Goal 2 Professional Development 2.2.4, 2.4.2, 2.4.2.2 Goal 5 Equity 5.7.1.1
(14) A description of how the local educational agencies in the State will provide incentives to teachers who are technologically literate and	Goal 1 Student Achievement 1.3.1 Goal 2 Professional Development 2.1.1, 2.1.3, 2.5.1

State Technology Plan Requirements in NCLB	Compliance Notations
teaching in rural or urban areas, to encourage such teachers to remain in those areas.	Goal 4 Partnerships 4.3.1 Goal 5 Equity 5.4.1
(15) A description of how public and private entities will participate in the implementation and support of the plan.	Goal 4 Partnerships 4.1.2 and 4.1.3. Also see Appendix A for a listing.

Appendix D - Glossary of Acronyms

ADE – Arizona Department of Education

AIF Agency Information Factory (data warehouse concept)

AIMS – Arizona's Instrument to Measure Standards: a standards-based test

AEMA – Arizona Educational Media Association

ASSET – Arizona School Services through Educational Technology

AzTEA – Arizona Technology in Education Alliance (an affiliate of ISTE)

Best practices – a Technique or methodology that, through experience and research, has proven to reliably lead to a desired result.

CRESMET - Center for Research on Education in Science, Mathematics, Engineering and Technology

Data warehouse – A consolidated assemblage of organization-wide data that is optimized for reporting and analysis.

DAP – District Assessment Plan – a unique LEA design for determining student achievement and growth.

GITA - Government Information Technology Agency

Information factory – An operational environment, preferably Web based that provides a data warehouse, and an analytical/informational application.

ISTE – International Society of Technology Educators

LMC – Library Media Centers

MEC – Microcomputers in Education Conference

MERIT MichK12.org is a joint project of Merit Network, Inc. and Michigan State University,

MIS – Management Information Services (Systems) – aka: Information Technology, Data Processing

NCLB – No Child Left Behind Act of 2001, federal legislation

NETS – National Educational Technology Standards, also NETS for Teachers

PDLA – Professional Development Leadership Academy

RTC – Regional Training Centers

SAIS - Student Accountability and Information System

SFB – School Facilities Board, an Arizona agency

SIF - School Interoperability Framework

SIP – School Improvement Plan (part of Consolidated Plan required for underperforming sites and LEAs)

Stanford 9 – a Norm-referenced assessment instrument